The European Journal of Public Health Advance Access published June 20, 2011
European Journal of Public Health, 1–5

doi:10.1093/eurpub/ckr066

Development and assessment of criteria to select projects for funding in the EU health programme

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Received 28 September 2010, accepted 27 April 2011

Background: Projects are the main financing mechanism within the EU community action programme for public health. This article reports the process of establishing and validating evaluation criteria for projects submitted for funding within this programme, to ensure that projects selected for funding conform with quality standards. **Methods:** An evaluation checklist was developed, drawing on project management and health promotion literature, to Score 3 aspects of project quality: policy and contextual relevance (five criteria, scores 0–8), technical quality (five criteria, scored 0–6) and management quality (six criteria, scored 0–5). Teams of three people made consensus ratings with the checklist on each of 215 eligible applications submitted in response to Calls for Proposals in 2007 and 151 submitted in 2008. Construct validity, internal consistency and predictive validity were assessed on the grouped consensus ratings using psychometric test statistical methods. **Results:** Principal component analyses on both the 2007 and 2008 data gave a three component solution, which largely coincides with the dimensions of contextual relevance, technical quality and management quality. Reliability analyses show high Cronbach α's (>0.86) for each of the three scales. Discriminant analyses indicate that all three of the dimensions contributed to the decision to fund a project. Over the 2 years, innovation, content specification, EU added value and geographical coverage contributing most consistently to the success of an application. **Conclusion:** The study shows the successful development and validation of criteria to evaluate EU health project grant proposals.

Keywords: assessment, EU health programme, project quality, validity

Introduction

The European Commission in 2007 adopted the strategy 'Together for Health: A Strategic Approach for the EU 2008–2013', which provides an overarching framework to guide actions on health at the European level, complementing the work done by Member States. The instrument to implement the health strategy is the Community Action Programme for Public Health. A first action programme ran from 2003 to 2008, for a total budget of €353.77 million; the second programme came into force in 2008, and will run until 2013, with a budget of €321.5 million.

Institutions, associations and organizations in the health field are encouraged to participate in the programme by implementing actions focusing on specific priorities, defined on an annual basis by the Commission. To ensure their participation, a variety of financing mechanisms are offered, including tendering, conference grants, operating grants for non-governmental organizations or specialized networks and joint financing of actions by the Community and one or more Member States. However, in terms of budget size, the main financing mechanism to achieve the programme objectives is the co-financing of actions in the form of projects.

A project is a systematic, goal-oriented, temporary and one-time activity undertaken to create a unique product or service.[1] Projects differ from routine work, in the sense that they do not involve the implicit or explicit procedures that exist in the organization to regulate the day-to-day work. As such, they are a particularly useful way to introduce innovations, address new challenges or find solutions for problems for which the existing procedures do not accommodate. The goal of a project can be to increase knowledge (research projects), develop and pre-test interventions to address a particular problem (development projects), or disseminate and implement an existing intervention (implementation projects).[2] Regardless of their objective, however, projects should confirm with quality standards. While the quality of research is typically assessed in terms of the credibility of the evidence base provided,[3] quality standards for projects are concerned with three elements: the relevance of the products or service that are created; the technical and methodological quality with which these results or services are produced; and the way in which this process is managed.[1,4] Although it would seem evident to use these quality elements as a basis for selecting grant proposals for funding, there is surprisingly little research examining the criteria and strategies for evaluating grant proposals in the health sector.

To enhance the quality of projects funded within the EU Health Programme, the EU in 2005 established the Executive Agency for Health and Consumers (EAHC). The agency is entrusted with the overall technical and financial implementation of the Health Programme, including the launch of annual calls for proposals, the evaluation and the selection of proposals for co-funding, and the follow-up of these projects. The evaluation of the proposals applied by the agency essentially involves three steps: (i) a screening of each proposal for compliance with the exclusion criteria published in the Call for Proposal; (ii) a financial and organizational analysis for compliance with the selection criteria; and (iii) an evaluation of the award criteria. For the latter, external experts evaluate each proposal individually on pre-defined criteria; next, consensus meetings are organized resulting in a consensus evaluation report and a ranking of proposals, providing the basis for a decision about funding by the Evaluation Committee.

As the award criteria and their application by the external evaluators are the cornerstone of the process leading to the funding decision, their validity is essential. An analysis by the EAHC of the evaluation process applied previously by the Commission revealed that only a limited number of the criteria contained in the

existing evaluation checklist were actually used for the evaluation.[5] This was partly due to a poor application of the criteria by the evaluators, whose overall impression of project quality often overruled the meaning of the individual criteria, but also to the lack of a clear conceptual and psychometric basis for the criteria. While the first problem was addressed by providing a better training of the external evaluators, the second problem called for a review of the award criteria. The present article reports the process to establish new criteria and their validation on the basis of the evaluation of proposals for funding in the Call for Proposals 2007 and 2008.

Methods

Criteria

A provisional list of criteria to evaluate project proposals was developed, drawing on the project management literature and on a review of existing instruments to assess project quality in public health and health promotion, more particularly Preffi,[6] Quint-Essenz[7] and EQUIHP.[8] While these instruments are all specific for health promotion, the criteria that were selected from these instruments were all generic to projects in the broad field of public health. This list was discussed by a team of experts in public health and project management and further refined, resulting in a set of 16 criteria, grouped into 3 categories:

> (1) The first category, 'Policy and contextual relevance of the project', contained five criteria: (i) contribution to the Public Health Programme and annual work plan in terms of meeting the objectives and priorities; (ii) strategic relevance in terms of expected contributions to the existing knowledge and implications for health; (iii) added value at European level in the field of public health; (iv) pertinence of the geographical coverage; and (v) adequacy with the social, cultural and policy context.
> (2) The second category referred to the 'Technical quality of the project', and involved five criteria: (i) quality of the evidence base; (ii) content specification: aims and objectives, target groups, methods, anticipated effects and outcomes; (iii) innovative nature, technical complementarities and avoidance of duplication of existing actions at EU level; (iv) evaluation strategy; and (v) dissemination strategy.
> (3) The third category referred to the 'Management quality of the project', and included six criteria: (i) planning and organization of the project; (ii) organizational capacity; (iii) quality of the partnership; (iv) communication strategy; (v) overall and detailed budget; and (vi) financial management. For the 2008 Call, the two last criteria were collapsed.

A guideline with scoring instructions for the criteria was developed, as well as a standard evaluation form with scores ranging between 0 and 8 (for the policy relevance criteria), 0 and 6 (for the technical quality) or 0 and 5 (for the management quality criteria). The difference in scoring scales reflects the different weighting for the three types of criteria for the decision to fund, with the sum of all criteria equalling 100.

Data

Use was made of the projects submitted for funding in response to the Calls for Proposals 2007 and 2008. In 2007, 222 proposals were received, 7 of which were excluded for non-compliance with the formal submission requirements, leaving a total of 215 proposals to be evaluated. The proposals had been submitted by organizations from 25 different Member States, and were all multi-partner, multiple country projects. Among the submitting organizations were 92 NGO's, 52 academic organizations, 64 governmental organizations and 7 commercial organizations. One hundred and twenty-seven organizations were first time applicants; the other 88 had already applied for funding to the Public Health Programme previously. In 2008, 154 project proposals were received, 3 of which were excluded, leaving a total of 151 for the evaluation. The submitters were based in 21 different Member States, and included NGO's, academic organizations, governmental organizations and commercial organizations. The applicants' experience with submitting proposals was variable.

For both Calls, a single-stage evaluation procedure was followed, consisting of consecutive steps. First, each proposal was individually peer-reviewed by three external experts, selected from a database of experts. The experts scored each proposal on each of the award criteria, using the standard evaluation form. For the policy relevance criteria, the opinion of an EU Health official was also provided. Next, the individual reviews were consolidated into an integrated evaluation for each proposal during a consensus meeting moderated by the Executive Agency's staff, resulting in consensus scores for each of the criteria. Proposals were ranked on the basis of the (summed) consensus scores for discussion by an evaluation committee which made the final decision to fund. This decision was mainly based on the consensus scores, but other elements were also taken into consideration (notably, coverage of priorities within the work plan, overlap with projects in other EC funded programmes, etc.)

Analyses

To establish the validity of the evaluation criteria, both construct and predictive validity were considered.[9] To consider the 'construct validity' of the evaluation checklist, the relationship between the criteria was examined by computing Pearson product–moment correlations between the consensus scores for the 2007 data, followed by an exploratory principal component analysis with a fixed number of components. Scales were composed by summing the consensus scores for the criteria with a high factor loading on a given component. A similar analysis was performed on the data for 2008 to ascertain comparability of the factor structure. The internal consistency of the scales based on the consensus scores was measured by means of Cronbach's α. As a measure of the average correlation of the items in a given scale, Cronbach α can be considered as an estimate of the reliability of test scores.

The 'predictive validity' of the checklist was assessed using Discriminant Function Analysis (DFA) to assess the capacity of the evaluation checklist to distinguishing between successful and unsuccessful applications, as determined by the evaluation decision (acceptance for funding or not) of the evaluation committee. While this decision was based upon the experts' consensus evaluation, it was considered as sufficiently independent to serve as an outcome measure. DFA were performed separately for the 2007 and 2008 Calls. For both data sets, three separate analyses were performed. First, the consensus scores on the three scales (policy relevance, technical quality and management quality) were entered as discriminating variables to consider the predictive validity of the scales. Second, all the criteria were entered into the analysis to evaluate the predictive validity of each criterion separately. Finally, a stepwise DFA with a backwards procedure was used to select the most parsimonious set of criteria.

Results

Construct validity

Correlational analysis of the 2007 data revealed high correlations between all the award criteria, suggesting a general dimension of 'project quality'. However, the highest correlations are observed between criteria within each category (i.e. between 0.51 and 0.81 for policy relevance, between 0.56 and 0.76 for technical quality and between 0.55 and 0.71 for management quality), rather than between criteria belonging to different categories. So, despite the high correlations between all the criteria there seems to be a differentiation between the three dimensions of project quality as reflected in the categories of criteria.

This is supported by the results of the principal component analysis (table 1). When the number of components is established at 3, a component solution is found which explains 70.92% of the common variance. After Varimax rotation, the first component explains 31.88% of the variance, the second 20.89 and the third 18.16%. All of the criteria measuring technical quality obtain a high factor loading (0.58 or more) on the first component, 3 of the 5 criteria related to policy relevance load highly (0.73 or more) on the second component and 3 of the 6 criteria for management quality on the third (0.56 or more). The first component also has high loadings for geographical coverage, adequacy to the context, planning and organization, organizational capacity and communication strategy. Except for geographical coverage and partnership quality, none of the criteria has a high loading on more than one dimension, which attests to the specificity of the dimensions.

These findings are confirmed on the data for 2008. With the number of components again established at 3, the principal component analysis on the 2008 consensus scores yields a component solution explaining 74.08% of the common variance. After Varimax rotation, the first component explains 26.08% of the variance, the second 24.04 and the third 23.96. As shown in the right-hand column of table 1, all the five criteria measuring policy relevance obtain a high factor loading (0.58 or more) on the first component, all five criteria related to technical quality load highly (0.58 or more) on the second component and all the five criteria for management quality on the third (0.57 or more). Except for innovative nature (0.55 on the first component) and planning quality (0.50 on the second component), none of the criteria has a high loading on more than one component. Thus, the factor loadings obtained in 2008 not only resemble those obtained in 2007, but also correspond even better with the intended meaning of each criterion, thus confirming the underlying structure of the checklist.

Internal consistency

The Cronbach α coefficients for each of the pre-established dimensions (policy relevance, technical quality and management quality) are shown in table 2. High internal consistency coefficients (α of 0.86 or more) are obtained for each of the three scales on both the 2007 and 2008 data. This means that the items of the scales are highly inter-correlated, and that the scales can therefore be considered as a reliable measure of the underlying constructs. Furthermore, removal of items from the scales would result in a decrease of Cronbach α in all three scales, except for 'Overall and detailed budget/ Financial management' in the third scale in 2008, meaning that each of the criteria contributes to the scale for which it was intended. In conclusion, the data confirm that the pre-conceived dimensions of policy relevance, technical quality and management have a sufficient level of construct validity and internal consistency.

Table 1 Rotated component matrix (factor loadings) for a principal component analysis of the evaluation criteria for projects, 2007 and 2008[a]

	Components					
	2007			2008		
	1	2	3	1	2	3
Contribution to PHP and WP	0.203	**0.853**	0.177	**0.798**	0.173	0.198
Strategic relevance	0.436	**0.732**	0.264	**0.802**	0.361	0.259
EU added value	0.475	**0.735**	0.302	**0.771**	0.429	0.313
Geographical coverage	**0.517**	0.511	0.405	**0.660**	0.230	0.495
Adequacy to context	**0.610**	0.425	0.250	**0.579**	0.495	0.392
Evidence base	**0.579**	0.375	0.401	0.401	**0.670**	0.332
Content specification	**0.655**	0.308	0.459	0.432	**0.583**	0.472
Innovation and complementarity	**0.642**	0.493	0.274	0.551	**0.672**	0.201
Evaluation strategy	**0.645**	0.317	0.401	0.172	**0.761**	0.344
Dissemination strategy	**0.713**	0.388	0.132	0.326	**0.652**	0.378
Planning and organization	**0.681**	0.198	0.435	0.375	0.502	**0.570**
Organizational capacity	**0.704**	0.250	0.393	0.221	0.461	**0.647**
Partnership quality	0.502	0.316	**0.555**	0.436	0.244	**0.726**
Communication strategy	**0.762**	0.228	0.139	0.159	0.387	**0.778**
Overall and detailed budget	0.255	0.316	**0.715**	0.276	0.212	**0.694**
Financial management	0.206	0.125	**0.824**	0.798	–	–

a: The order of the first two components in 2007 and 2008 is reversed on the basis of the different eigenvalues obtained for the two data sets. Bold values indicate the highest loading of each criterion.

Predictive validity

Discriminant function analysis on the scale scores for 2007 resulted in a function which significantly discriminates between projects accepted and not accepted for funding [$R = 0.777$, Wilks' $\lambda = 0.396$, χ^2 (3df) = 195.91, $P < 0.001$]. The structure matrix, giving the correlation of each scale with the discriminant function, showed that each of the three scales is highly correlated with the function, indicating that all three of the dimensions contributed to the decision to fund a project or not to fund.

When all the criteria are entered into the analysis as discriminating variables, a discriminant function is obtained with $R = 0.794$ [Wilks' $\lambda = 0.369$, χ^2 (16df) = 204.24, $P < 0.001$]. The structure matrix indicates that all criteria are correlated with the function, but to a different degree (table 3): the criteria which contribute most strongly to the funding decision are innovation and complementarity, EU added value and content specification (all above 0.70), while communication strategy, overall and detailed budget, contribution to the Public Health Programme and work plan and financial management contributed less.

The data for 2008 confirm that a significant discrimination can be made between projects that were accepted or not accepted for funding on the basis of the scales scores [$R = 0.670$, Wilks' $\lambda = 0.550$, χ^2 (6df) = 87.82, $P < 0.001$]. A second discriminant function, distinguishing between the proposals placed on the reserve list and the ones that were accepted or not accepted, was not significant [$R = 0.046$, Wilks' $\lambda = 0.998$, χ^2 (2df) = 0.32, $P = 0.853$]. When all the criteria were entered into the analysis as discriminating variables, the discrimination between projects accepted for funding or placed on the reserve list and not accepted for funding was also significant [$R = 0.695$, Wilks' $\lambda = 0.498$, χ^2 (30df) = 98.243, $P < 0.001$]. The criteria which contributed most strongly are EU added value, strategic relevance and content specification (all above 0.75).

Table 2 Reliability coefficients for the scales for the evaluation of projects, 2007 and 2008

Scale	Number of items	Items	Cronbach's α	
			2007	2008
Policy relevance	5	Contribution to PHP and WP Strategic relevance EU added value Geographical coverage Adequacy to context	0.903	0.919
Technical quality	5	Evidence base Content specification Innovation and complementarity Evaluation strategy Dissemination strategy	0.907	0.900
Management quality	5	Planning and organization Organizational capacity Partnership quality Communication strategy Overall and detailed budget/ Financial management	0.875	0.861

Table 3 Correlation of criteria scores for evaluation of projects with discriminant function for recommendation to fund, 2007 and 2008

Criteria	Correlations with discriminant function	
	2007	2008
EU added value	0.743	0.823
Strategic relevance	0.629	0.785
Content specification	0.726	0.753
Geographical coverage	0.699	0.730
Innovative nature	0.760	0.727
Adequacy with context	0.571	0.723
Evidence base	0.618	0.721
Planning quality	0.620	0.645
Partnership quality	0.531	0.565
Contribution to PHP	0.444	0.560
Dissemination strategy	0.532	0.551
Budget	0.449	0.527
Financial management[a]	0.330	–
Communication strategy	0.475	0.486
Organizational capacity	0.578	0.467
Evaluation strategy	0.609	0.466

a: For the 2008 evaluation, the criteria of budget and financial management were combined

The lowest contribution is noticed for the communication and evaluation strategy, and organizational capacity. So, whereas all criteria seem to contribute to the decision regarding the acceptance for funding, the relative contribution of each criterion is different from 2007, with EU added value, strategic relevance, adequacy with context, evidence base, contribution to the Health Programme and budget/financial management becoming more important, and organizational capacity and evaluation strategy less important.

Discussion

Projects, in the sense of systematic, goal oriented and temporary activities undertaken by consortia of organizations from various EU Member States to find solutions for health problems and improve the health of the citizens, are the main mechanism to achieve the objectives of the EU in the field of public health, as set out in the EU health strategy. The EU stimulates projects that are of strategic relevance for the strategy by offering co-financing through the annual Calls for Proposals, launched within the Public Health Action Programme. However, in order to maximize the chances that these projects effectively reach their objectives and contribute to the EU health strategy, it is necessary to set firm quality standards in terms of EU policy relevance, technical and management quality, and to only select the 'best' projects for co-funding. Although the quality of a project needs to be addressed at all stages of the project life cycle, the evaluation of project proposals submitted for funding is a key element in selecting the most valuable projects, and thus in assuring the quality for the EU Health Programme. It is therefore essential that the process to evaluate and select projects for funding is also carried out according to quality standards.

The present article describes the development and statistical assessment of the evaluation criteria established by the Executive Agency for Health and Consumers. Compared with the criteria that were used by the European Commission until 2006 (i.e. prior to the establishment of the Executive Agency), the new criteria developed by the EAHC in 2007 were more explicitly based on conceptual models of project management and on current know-how regarding project planning and quality assessment for projects in public health and health promotion. Moreover, the coherence of the criteria was more thought through, and attention was paid to the standardization of the formulation of the criteria and of the scales to score them.

The results of our analyses indicate that these innovations were effective, in the sense that the new criteria did not show the redundancy of the old ones, as all criteria contributed to the decision for funding. In terms of construct validity, the principal components solutions found on the evaluation data for two consecutive Calls for Proposals reflect the three dimensions of policy relevance, technical quality and management quality that were underlying the development of the evaluation checklist. Each of the criteria contributes to the scale for which it was intended, and the scales have a sufficient level of construct validity and internal consistency. In terms of predictive validity, the discriminant function analyses showed that both in 2007 and 2008 all three of the dimensions contributed to the funding decision. While this suggests that the predictive validity of the factors underlying the evaluation criteria is stable, the relative contribution of the individual criteria to the funding decision differed between 2007 and 2008. However, criteria that consistently contributed strongly to the success of the application over both years were innovation, content specification, EU added value and geographical coverage.

Overall, these findings provide a positive assessment of the project evaluation criteria developed by the EAHC. The scales show good construct and predictive validity and a high internal consistency. Evidently, this in itself does not guarantee the objectivity of the evaluation process or the success of projects. The latter also depends on the correct application of the criteria by the evaluators, and on the quality of the management and follow-up of the projects during implementation. To address the first, the EAHC has developed guidelines for the evaluators, and offers training to ensure a correct understanding and application of the criteria. Careful monitoring of the evaluators' individual scores can demonstrate if their evaluation of the applications is systematic and objective. For the second, future efforts of the Agency could focus on the elaboration of criteria and tools for systematic follow-up of projects during their implementation and evaluation. As the experience with the selection criteria presented here show, structural modifications in the process of selecting, monitoring and reviewing projects based on conceptual models of project management and quality assurance can be a valuable way to improve the procedures and provide a stronger basis for the decision-making process regarding the funding of proposals.

Acknowledgements

Guy Dargent and Michel Pletschette are staff members of the European Commission. At the time of the study all three authors were affiliated with the EAHC. The authors alone are responsible for the views expressed in this publication, which do not necessarily represent the decisions, policy or views of the European Commission.

Conflicts of interest: None declared.

Key points

- The evaluation of project proposals submitted for funding is a key element in selecting the most valuable projects, and thus in assuring the quality for the EU Health Programme.
- New evaluation criteria were developed to select project proposals, based on conceptual models of project management and on existing tools for quality assessment of projects in public health and health promotion.
- Construct validity analysis shows that the criteria measure three distinct dimensions of policy relevance, technical quality and management quality

- The evaluation scales show good construct and predictive validity and a high-internal consistency.
- Criteria which consistently contributed to the success of applications in 2007 and 2008 were innovation, content specification, EU added value and geographical coverage.

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